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EXAMINER
LIANG, GWEN

ART UNIT	PAPER NUMBER
2172	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/550,451	Applicant(s) DAVISON, DAN	
	Examiner GWEN LIANG	Art Unit 2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,21 and 23-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,21 and 23-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This action is responsive to communications: Amendment A, filed on 9/26/02 with added claims 23-32. Claims 11-20 and 22 have been canceled. Claims 1-10, 21 and 23-32 are pending. Claims 1, 21, 23, 28 and 31 are independent claims.

2. The Examiner approves the new title of the application ".METHOD AND STRUCTURE FOR RELATIONALLY REPRESENTING DATABASE OBJECTS", stated in the amendment filed on 9/26/02.

3. The Examiner acknowledges the request for postponing the correction of the program listing in the specification.

4. The previous objection of claim 5 in paper number 6 is hereby withdrawn in view of applicant's amendment filed on 9/26/02.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-10, 21, 23-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Uppala (U.S. Patent No. 6,279,007).

With respect to claim 1, Uppala discloses a method ...comprising:

forming a first database table having a plurality of entries, each entry representing an object with an associated data (See for example: col. 6 lines 46-49, "The invention uses three data structures, shown as database tables in FIGS. 7A, 7B and 7C, to manage hierarchical values: node table 700, hierarchy value table 710 and hierarchy parent table 720."; col. 6 lines 51-60, "For each unique node value, the invention uses a first hashing algorithm to generate a node hash value 705 that identifies a row 701 in the node table 700. The invention assigns a unique node identifier 703 to the node value and stores the node identifier 703, the node hash value 705, and the node value 707 in the row 701 identified by the node hash value 705. In the embodiment shown in FIG. 7A, the node identifiers 703 are stored as binary numbers but a decimal format is used for clarity in explanation."; and Fig. 11A); and

forming a second database table having a plurality of entries, each entry defining a relationship between said plurality of objects, wherein each entry is associated with at least one of the multiple hierarchies (See for example: FIG. 7B, wherein relationships such as 1001-1002 and 1001-1003 are defined.).

Claim 2 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Uppala discloses a method wherein each of said plurality of relationships is defined between a pair of said objects (See for example: FIG. 7B.).

Claim 3 is rejected for the reasons set forth hereinabove for claim 2 and furthermore Uppala discloses a method wherein said relationship is between a parent and a child (See for example: FIGs. 6 and 7B.).

Claim 4 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Uppala discloses a method wherein said plurality of relationships include single parent and multiple parent hierarchies (See for example: FIGs 6 and 7B.).

Claim 5 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Uppala discloses a method wherein said plurality of relationships include tree type structures (See for example: FIG. 6).

Claim 6 is rejected for the reasons set forth hereinabove for claim 1 and furthermore Uppala discloses a method comprising forming a third database table, said third database table having a plurality of entries, each entry being a summary of said data from a plurality of entries from said first database table (See for example: FIG. 7C.).

Claim 7 is rejected for the reasons set forth hereinabove for claim 5 and furthermore Uppala discloses a method wherein each entry in said second database table defines a relationship between a pair of said objects (See for example: FIG. 7B.).

Claim 8 is rejected for the reasons set forth hereinabove for claim 7 and furthermore Uppala discloses a method wherein said relationship is between a parent and a child (See for example: FIGs. 6 and 7B.).

Claim 9 is rejected for the reasons set forth hereinabove for claim 8 and furthermore Uppala discloses a method wherein each entry in said second database table further defines a direct or indirect parent-child relationship (See for example: FIGs 6 and 7B)

Claim 10 is rejected for the reasons set forth hereinabove for claim 8 and furthermore Uppala discloses a method wherein each entry in said second database table further comprises a definition of a database structure to which said relationship is a part thereof (See for example: FIGs 7B, 7C, 11B and 11C.).

With respect to claim 21, Uppala discloses a method ...comprising:

forming a table of members available in the multiple simultaneous hierarchical database relationships (See for example: col. 6 lines 46-49); and

forming a table of reporting relationships among the members available in the multiple simultaneous hierarchical database relationships (See for example: FIG. 7B, wherein relationships such as 1001-1002 and 1001-1003 are defined.); and

forming a table having a set of hierarchies, each hierarchy corresponding to a reporting relationship in said table of reporting relationships (See for example: Fig. 10, Fig. 11A and Fig. 11B, wherein each hierarchy corresponds to a reporting relationship, such as .Topics/Sports and Topics/Arts/Music; and also FIGs. 7C and 11C.).

With respect to claim 23, Uppala discloses a method ...comprising:

creating a first table, wherein the first table associates each of the plurality of objects with an object identifier (See for example: Fig. 7A, wherein each object is identified by a Node ID); and

creating a second table, wherein each parent-child relationship is represented by associating the object identifier of each parent object with the object identifier of each related child object and indicating that each parent-child relationship is associated with the first hierarchical relationship, so that multiple simultaneous hierarchies can defined using the relational data structure without needing dedicated database relationships between objects in the multiple hierarchies (See for example: Fig. 7B, wherein the parent-child object relationship is identified in the column Hierarchical Value and is associated with a hierarchy identified by Hierarchical Value ID, wherein simultaneous hierarchies such as A/B/C and A/C can be defined using the relational data structure.).

Claim 24 is rejected for the reasons set forth hereinabove for claim 23 and furthermore Uppala discloses a method wherein the second hierarchical relationship is defined by:

creating at least one different parent-child relationship than is present in the first hierarchical relationship; and indicating that the different parent-child relationship is linked to the second hierarchical structure (See for example: FIGs. 6 and 7B, 1001 (A)-1002 (B)-1003 (C)-1004 (D) and 1001 (A)-1002 (B)-1004 (D))

Claim 25 is rejected for the reasons set forth hereinabove for claim 24 and furthermore Uppala discloses a method comprising creating a third table, wherein the

third table includes a summary of the first and second hierarchies (See for example: FIG. 7C.).

Claim 26 is rejected for the reasons set forth hereinabove for claim 24 and furthermore Uppala discloses a method comprising retrieving data associated with at least one of the plurality of objects in a single round trip (See for example: col. 12 line 59 – col. 13 line 19).

Claim 27 is rejected for the reasons set forth hereinabove for claim 23 and furthermore Uppala discloses a method comprising indicating whether each parent-child relationship is direct or indirect (See for example: FIGs 6 and 7B).

With respect to claim 28, Uppala discloses a method ...comprising:

associating each of the plurality of objects with an object identifier (See for example: Fig. 7A, wherein each object is identified by a Node ID); and

associating the object identifier of each of the plurality of objects with the object identifier of each related object to represent each defined relationship (See for example: Fig. 7B, wherein the parent-child object relationship is identified in the column Hierarchical Value and is associated with a hierarchy identified by Hierarchical Value ID, wherein simultaneous hierarchies such as A/B/C and A/C can be defined using the relational data structure.); and

indicating that each relationship is associated with at least one of the multiple hierarchies (See for example: FIG. 7B, wherein relationships such as 1001-1002 and 1001-1003 are defined.).

Claim 29 is rejected for the reasons set forth hereinabove for claim 28 and furthermore Uppala discloses a method wherein the retrieving includes:

summarizing data associated with a first of the plurality of objects (See for example: FIG. 7C, wherein the relationship such as A-A/B/C associates A with A/B/C); and

retrieving defined relationships between the first object and a remainder of the plurality of objects (See for example: FIG. 7C, wherein the relationship such as A/B/C – A/B/C associates A with the reminder of the object A.); and

summarizing data associated with the remainder of the plurality of objects that have a defined relationship with the first object (See for example: FIG. 7C, the parent hierarchical value ID 1003 (A/B/C) would be the summarizing point for its related child hierarchical value ID 1004 (A/B/C/D), which is the reminder of its parent 1003.).

Claim 30 is rejected for the reasons set forth hereinabove for claim 29 and furthermore Uppala discloses a method comprising dividing the relational data structure among at least two tables (See for example: col. 8 lines 42-51.).

With respect to claim 31, Uppala discloses a relational data structure ...comprising:

a first table for:

organizing a plurality of objects, wherein each object is related to at least one other object by a defined relationship (See for example FIG. 7B, wherein relationships such as 1001-1002 and 1001-1003 are defined) ; and

storing an object identifier associated with each of the plurality of objects (See for example: FIG.7A, wherein Node ID is equivalent to an object identifier.); and

a second table for:

associating the object identifier of each of the plurality of objects with the object identifier of each related object to represent each defined relationship (See for example: Fig. 7B, wherein the parent-child object relationship is identified in the column Hierarchical Value and is associated with a hierarchy identified by Hierarchical Value ID, wherein simultaneous hierarchies such as A/B/C and A/C can be defined using the relational data structure.); and

storing a hierarchy identifier associated with each relationship for indicating that each relationship is associated with a particular one of the multiple hierarchies (See for example: FIG.7B, wherein a Hierarchical Value ID such as 10007 serves as a hierarchy identifier in identifying a particular relationship of 1001-1003.).

Claim 32 is rejected for the reasons set forth hereinabove for claim 31 and furthermore Uppala discloses a data structure comprising a third table for storing a summary of each of the multiple hierarchies (See for example: FIG. 7C.).

Response to Arguments

7. Applicant's arguments with respect to claims 1-10, 21, 23-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GWEN LIANG whose telephone number is 703-305-3985. The examiner can normally be reached on 9:00 A.M. - 5:30 P.M. Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, KIM VU can be reached on (703) 305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7239 for regular communications and 703-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

G.L.
November 5, 2002

KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100